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10/031,074	04/15/2002	Kenji Koishi	2002-0023A	3830

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WENDEROTH, LIND & PONACK, L.L.P.
2033 K STREET N. W.
SUITE 800
WASHINGTON, DC 20006-1021

EXAMINER	
ZHAO, DAQUAN	

ART UNIT	PAPER NUMBER
2621	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/031,074	KOISHI ET AL.	
	Examiner	Art Unit	
	Daquan Zhao	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *15 April 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *39-75* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *39--75* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *01/15/2002;08/30/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 51-58 are rejected under 35 U.S.C. 101 because claims 51 and 55 are directed nonfunctional descriptive material (video and audio data) is recorded on some computer-readable medium (optical disk). This is non statutory since no requisite functionality is present to satisfy the practical application requirement.

Claims 52-54, 56-58 are also affected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 39, 40, 59, and 60 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada et al (JP 11-134795, please see translation attached), Ito et al (US 5,719,985) and Otaka et al (US 6,044,198).

For claim 39, Tada et al teach a method of recording video data on N (N is an integer) channels synchronously onto an optical disk (e.g. paragraph [0029]-[0031], N=3), the video data formed of a time series of video frames (e.g. paragraph [0024], video signal in MPEG format), the input video data on each channel being accompanied by audio data that is recorded synchronously with the video data (e.g. paragraph [0024], video and audio signal are multiplexed and stored in the magneto-optical disk), the method comprising:

determining a compression ratio for each channel (e.g. paragraph [0009], compression rate is N) so that a total data amount for the N channels of video data and audio data to be recorded is less than or equal to a data amount that can be recorded at a maximum recording rate of the optical disk (e.g paragraph [0032], maximum recording rate: MPEG compression rate rage 10-12 Mbps, bit rate is set equal to 12 Mbps), whereby the video data can be recorded onto the optical disk so that a total amount of data on the N channels to be recorded in a unit time is substantially constant regardless of the number of channels to be recorded (e.g. paragraph [0032], total bit rate is set equal to 12 Mbps for plural channels). However, Tada et al fail to teach the record time T being a minimum time of record times individually required to record at least one video frame for each of all channels. Ito et al teach the record time T being a minimum time of record times individually required to record at least one video frame for each of all channels (e.g. figure 4, In1, In2, In3, and In4, column10, lines 1-25, recording time to record one frame from each of channel In1-In4 is 1/30 second). It would have been obvious for one ordinary skill in the art at the time the invention was made to have

utilized the recording time disclosed by Ito et al in the recording system disclosed by Tada et al to carry out recording process in time division manner, thereby making it possible to input predetermined video data and output predetermined video without interruption (Ito et al, column 10, lines 26-32).

Ito et al also teach a predetermined order of channel (e.g. figure 4, from In1 to In4). However, Tada et al and Ito et al fail to teach arranging the video data and the audio data into each frame. Otaka et al teach arranging the video data and the audio data into each frame (e.g. figure 7, One Frame contains video data 202 and audio data 201, column 12, lines 16-40). It would have been obvious for one ordinary skill in the art at the time the invention was made to have utilized the frame of video and audio disclosed by Otaka et al in the system disclosed by Tada et al and Ito et al to provide a digital signal recording and reproducing device capable of remarkably reducing the memory capacity necessary for the storage device (Otaka et al, column 3,lines 18-33).

For claim 40, Tada et al teach the compression ration for the video data on each channel is set to 1/N (e.g. paragraph [0034], max bit rate is 12 Mbps, for three channels, each channels is set at 4Mbps).

Claims 59 and 60 are rejected for the same reason discussed for claims 39 and 40, respectively.

Claims 41, 43, 61 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada et al (JP 11-134795, please see translation attached), Ito et al

(US 5,719,985) and Otaka et al (US 6,044,198), as applied to claims 39 and 40 above, and further in view of Arai (US 6,169,844).

For claim 41, Ito et al teach the predetermined recording time T (see the teaching of Tada et al, Ito et al and Otaka et al above). However, Tada et al, Ito et al and Otaka et al fail to teach an allocation ratio of the data amount to be recorded for each channel according to the content of the video data on each channel, whereby the compression ratio for each channel is determined according to the determined allocation ratio. Arai teaches an allocation ratio of the data amount to be recorded for each channel according to the content of the video data on each channel (e.g. column 1, lines 40-50, prescribed compression ratio for each program), whereby the compression ratio for each channel is determined according to the determined allocation ratio (e.g. column 2, lines 38-51, compression ratios match the respective recording modes). It would have been obvious for one ordinary in the art at the time the invention was made to modify the teaching of Arai in according to the content of the video data and incorporate that into the teaching of the system disclosed by Tada et al, Ito et al and Otaka et al to reduce the data used when a plurality of programs are simply recorded at the same time. Thereby, it is possible to record the plurality of programs completely (Arai, column 1, lines 29-35).

For claim 43, Ito et al teach the predetermined recording time T (see the teaching of Tada et al, Ito et al and Otaka et al above). However, Tada et al, Ito et al and Otaka et al fail to teach computing a total data amount of video data on N channels to be

recorded, and a capacity of free area of the optical disk in which data can be recorded, whereby the compression ration is determined so that the total amount of data to be recorded is less than or equal to the capacity of free area of the optical disk in which data can be recorded. Arai teaches computing a total data amount of video data on N channels to be recorded (e.g. column 6, lines 19-42, 1.8 GB + 0.9 GB for two channels), and a capacity of free area of the optical disk in which data can be recorded (e.g. column 5, lines 1-11, unused recording capacity), whereby the compression ration is determined so that the total amount of data to be recorded is less than or equal to the capacity of free area of the optical disk in which data can be recorded (e.g. column 6, lines 34-42, and figure 6, recording mode, standard mode:2Mbps, long-play mode:1Mbps, column 2, lines 47-51). It would have been obvious for one ordinary skill in the art at the time the invention is made to incorporate the teaching of Arai into the combination taught by Tada et al, Ito et al and Otaka et al to notify user of the impossibility of recording the programs as command when the maximum data transfer rate is surpassed (Arai, column 6, lines 1-8).

Claims 61 and 63 are rejected for the same reasons discussed as claim 41 and 43, respectively.

Claims 42 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tada et al (JP 11-134795, please see translation attached), Ito et al (US 5,719,985) and Otaka et al (US 6,044,198) in view of Arai (US 6,169,844), as applied to claims 39 and 41 above and further in view of Fries (US 6,317,885 B1).

For claim 42, Tada et al, Ito et al, Otaka et al and Arai fail to teach the video data to be recorded includes attribute data indicating the contents of the video data, the attribute data is detected from the video data, and the content of the video data on each channel is determined according to the detected attribute data. Fries teaches the video data to be recorded includes attribute data indicating the contents of the video data, the attribute data is detected from the video data, and the content of the video data on each channel is determined according to the detected attribute data (e.g. column 4, lines 17-28, meta-data indicates the content of the video data). It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teaching of Fries with the system disclosed by Tada et al, Ito et al, Otaka et al and Arai to facilitates an interactive relationship between transmitted programming and information related thereto (Fries, column 2, lines 7-9).

Claim 62 is rejected for the same reasons discussed as claim 42.

Claims 44, 45, 48, 49, 50, 55, 64, 65, 68, 69, 70,73, 74, 75, and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US 6,169,844 B1), and Otaka et al (US 6,044,198).

For claims 44 and 73, Arai teaches a method of recording video data of N (N is an integer) channels synchronously onto an optical disk (e.g. figure 2A, video and audio signals SVA to SVD, figure 2B, optical disk 12), the video data formed of a time series of video frames (e.g. figure 2A, MPEG compressor 7A to 7D), the input video data on each channel being accompanied by audio data that is recorded synchronously with the

video data (e.g. figure 2A, video and audio signals SVA to SVD, column 2, lines 25-51), the method comprising:

Selecting one of the N channels in units of frames (e.g. column 10, lines 60-67, GOP) as a channel of which video data is recorded (e.g. figure 2A, multiplexer 8, column 2, line 52 – column 3, line 3, encoded data DFA to DFD corresponding to the plurality of programs are multiplexed on a bi-by-bi basis);

Recording the video data on the selected channel onto the optical disk (e.g. figure 2B, optical disk 12, column 3, lines 3-15); and

Recording the audio data on N channels as well as the video data on channel (e.g. figure 2A, video and audio signals SVA to SVD, column 2, lines 25-51)

Whereby the video data on N channels can be time-division multiplexed and recorded onto the optical disk (e.g. figure 2A, multiplexer 8, column 2, line 52 – column 3, line 3, encoded data DFA to DFD corresponding to the plurality of programs are multiplexed on a bi-by-bi basis, and figure 3A-3F).

However, Arai fails to teach the arranging the video data and the audio data into each frame. Otaka et al teach arranging the video data and the audio data into each frame (e.g. figure 7, One Frame contains video data 202 and audio data 201, column 12, lines 16-40). It would have been obvious for one ordinary skill in the art at the time the invention was made to have utilized the frame of video and audio disclosed by Otaka et al in the system disclosed by Arai to provide a digital signal recording and reproducing device capable of remarkably reducing the memory capacity necessary for the storage device (Otaka et al, column 3,lines 18-33).

Claim 64 is rejected for the same reasons discussed as claim 44.

For claim 55, Arai teaches a optical disk (e.g. figure 2B, optical disk 12) having an area in which video data of N (N is an integer) channels synchronously onto an optical disk (e.g. figure 2A, video and audio signals SVA to SVD, figure 2B, optical disk 12), the video data formed of a time series of video frames (e.g. figure 2A, MPEG compressor 7A to 7D), the input video data on each channel being accompanied by audio data that is recorded synchronously with the video data (e.g. figure 2A, video and audio signals SVA to SVD, column 2, lines 25-51), the method comprising:

One of the N channels is selected as a channel of which video data is to be recorded, in unit of frames (e.g. figure 2A, multiplexer 8, column 2, line 52 – column 3, line 3, encoded data DFA to DFD corresponding to the plurality of programs are multiplexed on a bi-by-bi basis, or column 10, lines 60-67, unit of frames: GOP);

An area for recording the video data on selected channel onto the optical disk is arranged on a track of the optical disk (e.g. figure 2B, optical disk 12, column 2, lines 26-40).

However, Arai fails to teach video data and the audio data into each frame. Otaka et al teach video data and the audio data into each frame (e.g. figure 7, One Frame contains video data 202 and audio data 201, column 12, lines 16-40). It would have been obvious for one ordinary skill in the art at the time the invention was made to have multiplexed the frame contains video and audio data disclosed by Otaka et al by the multiplexer for N channel in the system disclosed by Arai to provide a digital signal

recording and reproducing device capable of remarkably reducing the memory capacity necessary for the storage device (Otaka et al, column 3,lines 18-33).

For claims 45 and 65, Arai teaches each channel is selected at every N bits (or frames) as a channel of which video is record. Otaka et al teach the frames. Please see discussion for claim 44 above.

For claims 48, 68 and 74, Arai teaches when each of the video data on the N channels (N is an integer) in a predetermined recording time (e.g. column 5, lines 57-65, time range 9:00-930) is to be synchronously recorded onto the optical disk, the method comprises:

Getting a total data amount for the N channels of video data to be recorded in the predetermined recording time (e.g. column 5, line 67- column 6,line 42, and figure 6, shows the recording capacity required, using recording rate to calculate the recording capacity needed), and a capacity of free area of the optical disk in which data can be recorded (e.g. column 5, lines 1-11, unused recording capacity);

Comparing the total data amount to be recorded with the capacity of free area of the optical disk (e.g. column 6, lines 36-48, system display the plurality of combinations of figure 6 and display the unused recording capacity is 2GB); and

Determining, when the total data amount to be recorded is greater than the capacity amount of the optical disk (e.g. column 7, lines 40-67, if total data amount to be recorded is greater than the capacity amount of the optical disk, the recording rate would be greater than the maximum recordable rate X. in this case, system display "impossibility to accept the additional reservation), the number of the video frame to be

recorded in a predetermined time so that at lease one of the N channels the total data amount to be recorded is less than or equal to the capacity of free are of optical disk (e.g. system calculate a n new available recording mode with reference to the maximum recordable rate X and the unused capacity of the optical disk 12, and display the result of calculation).

For claims 49, 69 and 75, Arai teaches a method of reproducing recorded data from an optical disk onto which video data on N channels (N is an integer) are compressed at a predetermined compression ratio and arranged in a predetermined order of channel to thereby be recorded, and onto which audio data on N channels are recorded as well as the video data in units of frames in a predetermined order of channel (see the teaching above), the method comprising:

Inputting information for designating a channel to be reproduced (e.g. column 4, lines 1-36, video and audio signal are supplied to monitor in response to user's operation);

Reading data from the optical disk in units of frames (e.g. column 4, lines 1-36, SVA to SVD);

Reproducing video data on the designated channel to be reproduced from the video data recorded in the read frame, after the video data is decompressed (e.g. figure 2, expander 18A); and

Reproducing audio data that and is on the channel to be recorded (e.g. column 4, lines 1-36, video and audio for one channel is reproduced).

However, Arai fail to teach the audio and video are in the same frame. Otaka et al teach video data and the audio data are in the same frame (see the motivation above).

For claims 50, 70 and 76, Arai teach a method of reproducing recorded data from an optical disk having an area in which video data on N channels (N is an integer) is recorded in units of frames by a time-division multiplexing method (e.g. figure 2, multiplexer 8), the optical disk storing the video data selected in every predetermined number of frames on one channel, and audio data on all channels continuous to the video data (see the teaching above), the method comprising:

Inputting information for designating a channel to be reproduced (e.g. column 4, lines 1-36, video and audio signal are supplied to monitor in response to user's operation);

Reading data from the optical disk in units of frames (e.g. column 4, lines 1-36, SVA to SVD);

If the video data included in the read frame is video data of designated channel to be reproduced, then reproduce the video data, and further reproducing audio data.

However, Arai fail to teach the audio and video are in the same frame. Otaka et al teach video data and the audio data are in the same frame (see the motivation above).

Claims 46, 47, 66, 67, 57, 58, 71, and 72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US 6,169,844 B1), and Otaka et al (US 6,044,198), as applied to claim 44 above, and further in view of Fries (US 6,317,885 B1).

Please see the teaching of Arai and Otaka et al above.

For claims 46,57, 66 and 71, Arai teaches an allocation ratio of the number of data for each channel to be recorded in a predetermined time is determined according to the recording mode (e.g. column 2, lines 48-51). However, Arai and Otaka et al fail to teach the content of the video data. Fries teaches the content of the video data (e.g. column 4, lines 17-28, meta-data indicates the content of the video data). It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teaching of Fries with the system disclosed by Arai and Otaka et al to facilitates an interactive relationship between transmitted programming and information related thereto (Fries, column 2, lines 7-9).

For claims 47, 58, 67 and 72, Fries teaches the video data to be recorded includes attribute data indicating the contents of the video data, the attribute data is detected from the video data, and the content of the video data on each channel is determined according to the detected attribute data (e.g. column 4, lines 17-28, meta-data indicates the content of the video data).

Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US 6,169,844 B1), Otaka et al (US 6,044,198) and Ito et al (US 5,719,985).

For claim 51, Arai teaches an optical disk having an area in which video data on N channels (N is an integer) are synchronously recorded (e.g. figure 2A, video and audio signals SVA to SVD, figure 2B, optical disk 12), the video data formed of a time series of video frames (e.g. figure 2A, MPEG compressor 7A to 7D), the input video data on each channel being accompanied by audio data that is recorded synchronously with the video data in each frame (e.g. figure 2A, video and audio signals SVA to SVD, column 2, lines 25-51), the disk comprising,

a area which is provided corresponding to a video series in one channel and in which video data and audio data on each channel are multiplexed and recorded in units of frames (e.g. column 2, line 25 – column 3, line 2, and column 10, lines 60-67, data can be multiplexed on a GOP-by-GOP basis), the area having a data length equal to a total of a sum for N channels (e.g. figure 2A, the length of DF at the output of the multiplexer equals the sum of data length from DFA to DFD, and figure 3A-3F).

wherein the predetermined compression ratio is determined so that a total data amount for the N channels of video data and audio data to be recorded is less than or equal to a data amount that can be recorded(e.g. column 5, lines 35-65, the recording data rate has to be less than the maximum data rate X). However, Arai fails to teach video data and the audio data into each frame. Otaka et al teach video data and the audio data into each frame (e.g. figure 7, One Frame contains video data 202 and audio data 201, column 12, lines 16-40). It would have been obvious for one ordinary skill in the art at the time the invention was made to have multiplexed the frame contains video and audio data disclosed by Otaka et al by the multiplexer for N channel in the system

disclosed by Arai to provide a digital signal recording and reproducing device capable of remarkably reducing the memory capacity necessary for the storage device (Otaka et al, column 3,lines 18-33).

Arai and Otaka et al fail to teach record time T being a minimum time of record times individually required to record at least one video frame for each of all channels. Ito et al teach the record time T being a minimum time of record times individually required to record at least one video frame for each of all channels (e.g. figure 4, In1, In2, In3, and In4, column10, lines 1-25, recording time to record one frame from each of channel In1-In4 is 1/30 second). It would have been obvious for one ordinary skill in the art at the time the invention was made to have utilized the recording time disclosed by Ito et al in the recording system disclosed by Arai and Otaka et al carry out recording process in time division manner, thereby making it possible to input predetermined video data and output predetermined video without interruption (Ito et al, column 10, lines 26-32).

Claim 52 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US 6,169,844 B1), Otaka et al (US 6,044,198) and Ito et al (US 5,719,985) as applied to claim 51 above, and further in view of Tada et al (JP 11-134795, see translation attached)

See the teaching of Arai, Otaka et al and Ito et al above.

For claim 52, Arai, Otaka et al and Ito et al fail to teach the predetermined compression ratio is set to 1/N. Tada et al teach the compression ration for the video data on each channel is set to 1/N (e.g. paragraph [0034], max bit rate is 12 Mbps, for

three channels, each channels is set at 4Mbps). It would have been obvious for one ordinary skill in the art at the time the invention was made to incorporate the teaching of Tada et al into the system disclosed by Arai, Otaka et al, and Ito et al to provide user a conveniently method to record the information on plural channels (Tada et al, paragraph [0010]).

Claims 53 and 54are rejected under 35 U.S.C. 103(a) as being unpatentable over Arai (US 6,169,844 B1), and Otaka et al (US 6,044,198), and Ito et al (US 5,719,985) as applied to claim 51 above, and further in view of Fries (US 6,317,885 B1).

See the teaching of Arai, Otaka et al and Ito et al above.

For claim 53, Arai teaches an allocation ratio of the number of data for each channel to be recorded in a predetermined time is determined according to the recording mode (e.g. column 2, lines 48-51). However, Arai Otaka et al, and Ito et al fail to teach the content of the video data. Fries teaches the content of the video data (e.g. column 4, lines 17-28, meta-data indicates the content of the video data). It would have been obvious for one ordinary skill in the art at the time the invention was made to combine the teaching of Fries with the system disclosed by Arai, Otaka et al and Ito et al to facilitates an interactive relationship between transmitted programming and information related thereto (Fries, column 2, lines 7-9).

For claim 54, Fries teaches the video data to be recorded includes attribute data indicating the contents of the video data, the attribute data is detected from the video data, and the content of the video data on each channel is determined according to the

detected attribute data (e.g. column 4, lines 17-28, meta-data indicates the content of the video data).

Claim 56 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 101, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kassatly (US 5,508,733);

Choi (US 5,615,017).

Ashley et al (US 6,584,273 B1, figure 10).

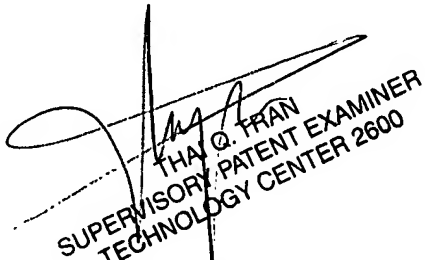
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daquan Zhao whose telephone number is (571) 270-1119. The examiner can normally be reached on M-Fri. 7:30 -5, alt Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Thai Q, can be reached on (571)272-7382. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DZ

Daquan Zhao



Tran Thai Q
Supervisory Patent Examiner